

# NMCP COVID-19 Literature Report #16: Friday, 22 May 2020

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Disclaimer: I am not a medical professional. This document is current as of the date noted above. While I make every effort to find and summarize available data, things are changing rapidly, with new research and potentially conflicting literature published daily. Best practice and evidence are constantly shifting during this international public health crisis.

Reports are biweekly, planned for Tuesdays and Fridays.

## Statistics

*Global* 5,128,492 confirmed cases and 333,489 deaths in 188 countries/regions

*United States\** top 5 states by cases (Virginia is ranked 14th)

	TOTAL	NY	NJ	IL	MA	CA
Confirmed Cases	1,577,758	356,458	151,586	102,688	90,084	88,480
Tested	13,056,206	1,555,055	544,274	672,020	501,486	1,421,127
Recovered	NA	62,826	24,236	NA	NA	NA
Deaths	94,729	28,743	10,846	4,607	6,148	3,604

\*see [census.gov](https://census.gov) for current US Population data; NA: not all data available

[JHU CSSE](https://covid19.jhu.edu/) as of 1000 EDT Friday, 22 May 2020

*Navy (Department of Defense)*

	TOTAL	MIL	CIV	DEP	CTR
Cases	1,350	1,149	119	42	40
Hospitalized	12	3	6	0	3
Recovered	1,614	1,154	255	112	93
Deaths	10	1	6	0	3
Cumulative*	2,974	2,304	380	154	136

\*cumulative total = active + recovered + deaths

[DOD](https://www.dod.mil/) dated Thursday, 21 May 2020

<i>Virginia</i>	Total	Chesapeake	Hampton	Newport News	Norfolk	Portsmouth	Suffolk	Virginia Beach
Cases	34,950	419	169	224	388	251	283	591
Hospitalized	4,145	82	30	38	59	40	43	90
Deaths	1,099	13	3	10	6	11	25	19

[VA DOH](https://www.vahq.org/) as of 1000 EDT Friday, 22 May 2020

## Summaries from Other Sources

[CEBM](#): Loss of smell and taste as symptoms of COVID-19: what does the evidence say? (20 May 2020)

"The evidence for anosmia as a symptom of COVID-19 started to emerge in late February and was restricted to Chinese populations. From late March, reports from countries outside China started to emerge and reported anosmia and loss of taste and smell as a symptom in people with COVID-19. A large, peer-reviewed report from UK and US community settings published in mid-May indicates that almost two-thirds of positive COVID-19 self-reported cases report a loss of smell or taste compared with a quarter of negative cases. An extremely cautious re-analysis of the data in Tong et al shows anywhere from 30% to 80% of confirmed COVID-19 cases reporting loss of smell or taste by mid-April."

"One of the potential negative impacts of the addition of acute loss of smell or taste to the list of symptoms that indicate self-isolation is the potential number of false-positive cases. Olfactory disorders including acute anosmia frequently occur with common colds and influenza. There are likely to be many people who will display symptoms but do not have coronavirus."

"The current evidence base is predominantly of poor quality, due mainly to the retrospective and cross-sectional nature of the included study designs. Ongoing studies using symptom tracking in healthy users to prospectively track symptom development are needed to reduce uncertainty. Such studies should also indicate when the presence of anosmia occurs in relation to other symptoms which will be critical in helping to reduce the number of false-positive cases."

## COVID Alert Levels

From Johns Hopkins Center for Health Security daily alerts newsletter, 21 May 2020 ([JHCHS](#)):

"Resolve to Save Lives released a color-coded COVID-19 alert system [[RSL](#)] to signify the risk of transmission in communities and recommend appropriate levels of individual precautions. Dr. Tom Frieden, former director of the US CDC, likened this system to wildfire risk level signs on hiking trails or ocean hazard flags on beaches; it is up to individuals reading these signs to understand the risk level around them [[FoxNews](#)] and act accordingly. This system includes four levels ranging from 'new normal' to 'high alert,' with corresponding measures that communities and individuals can take at each level to mitigate transmission risk. COVID Exit Strategy [[CES](#)], a collaborative COVID-19 data visualization website, has incorporated live data into the Resolve to Save Lives system to make a state-by-state alert system, including metrics for 3 key areas: disease situation, healthcare systems, and disease control. Notably, every US state is evaluated as High Alert as of today, even as all states begin to ease social distancing measures."

## COVID in Healthcare Workers

Two new articles published yesterday in JAMA Network Open discuss the prevalence of SARS-CoV-2 infection in healthcare workers. There is also an editorial discussing the two studies ([JAMA Netw Open](#) [ed]).

One is a cross-sectional study from the Netherlands that included 1353 healthcare workers with self-reported fever or respiratory symptoms. It found 6% were infected with SARS-CoV-2, representing 0.9% of all healthcare workers. Only 53% reported fever, and most experienced mild disease ([JAMA Netw Open](#) [K-vdB]).

The other article is a case series from Wuhan, China of 9684 healthcare workers. 110 (1.1%) tested positive for the virus, a higher rate of infection was found among those working in the low-contagion area during the early stage of the disease outbreak. Most healthcare workers with COVID-19 had nonsevere cases. They found asymptomatic carrier prevalence of 0.9% and a mortality rate of 0.9% ([JAMA Netw Open](#) [Lai]).

## Selected Primary Literature

*Recent—published in peer-reviewed journals within the last 7 days of report's date*

[Ann Emerg Med](#): Accuracy of Emergency Department clinical findings for diagnostic of coronavirus disease-2019 (21 May 2020)

A prospective study in which the researchers "sought to describe the medical history and clinical findings of patients attending the ED with suspected COVID-19 and estimate the diagnostic accuracy of patients' characteristics for predicting COVID-19."

"We included 391 patients of whom 225 tested positive for SARS-CoV-2. RT-PCR was more likely to be negative when the emergency physician thought that clinical probability was low, and more likely to be positive when she or he thought that clinical probability was high. Patient-reported anosmia and the presence of bilateral B-lines on lung ultrasound had the highest LR+ for the diagnosis of COVID-19 (7.58; 95% CI 2.36–24.36 and 7.09; 95% CI 2.77–18.12 respectively). The absence of a high clinical probability determined by the emergency physician and the absence of bilateral B-lines on lung ultrasound had the lowest LR- for the diagnosis of COVID-19 (0.33; 95% CI 0.25–0.43 and 0.26; 95% CI 0.15–0.45 respectively)."

[JAMA](#): Olfactory Dysfunction in COVID-19: Diagnosis and Management (20 May 2020)

" During the current pandemic, patients with recent-onset acute smell and/or taste dysfunction, with or without other symptoms of COVID-19, should undergo a period of self-isolation and, when possible, SARS-CoV-2 testing. In patients with symptoms that require acute hospital admission (eg, respiratory distress), chemosensory assessment of smell and

taste should only be considered when the clinical condition allows and appropriate PPE is available."

The article includes a figure outlining assessment and management of patients with COVID-19 related olfactory dysfunction.

[Lancet](#): Epidemiology, clinical course, and outcomes of critically ill adults with COVID-19 in New York City: a prospective cohort study (19 May 2020)

"We prospectively characterised the epidemiology, clinical course, and outcomes of 257 critically ill patients with laboratory-confirmed COVID-19 admitted to two hospitals in New York City over the first month of the city's outbreak. Consistent with reports from Italy and China, older age and cardiopulmonary comorbidities were associated with increased mortality. Novel findings in this study include determining independent associations between biomarkers for inflammation (interleukin-6) and thrombosis (D-dimer) and mortality, as well as identifying a high incidence of critical illness among racial and ethnic minorities in the current epicentre of the COVID-19 pandemic. Strengths of this study include prospective and complete collection of detailed clinical data and outcomes, and use of multivariable, time-varying analyses to quantify independent risk factors for in-hospital death in one of the largest studies to date of critically ill patients with COVID-19 in the USA."

[Phys Fluids](#): On coughing and airborne droplet transmission to humans (19 May 2020)

"Our understanding of the mechanisms of airborne transmission of viruses is incomplete. This paper employs computational multiphase fluid dynamics and heat transfer to investigate transport, dispersion, and evaporation of saliva particles arising from a human cough.... We computationally investigate the effect of wind speed on social distancing. For a mild human cough in air at 20°C and 50% relative humidity, we found that human saliva-disease-carrier droplets may travel up to unexpected considerable distances depending on the wind speed. When the wind speed was approximately zero, the saliva droplets did not travel 2 m, which is within the social distancing recommendations. However, at wind speeds varying from 4 km/h to 15 km/h, we found that the saliva droplets can travel up to 6 m with a decrease in the concentration and liquid droplet size in the wind direction. Our findings imply that considering the environmental conditions, the 2 m social distance may not be sufficient. Further research is required to quantify the influence of parameters such as the environment's relative humidity and temperature among others."

[Emerg Infect Dis](#): Detection of Severe Acute Respiratory Syndrome Coronavirus 2 RNA on Surfaces in Quarantine Rooms (18 May 2020)

"We investigated severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) environmental contamination in 2 rooms of a quarantine hotel after 2 presymptomatic persons who stayed there were laboratory-confirmed as having coronavirus disease. We

detected SARS-CoV-2 RNA on 8 (36%) of 22 surfaces, as well as on the pillow cover, sheet, and duvet cover."

[Emerg Infect Dis](#): Infectious SARS-CoV-2 in Feces of Patient with Severe COVID-19 (18 May 2020)

"Severe acute respiratory syndrome coronavirus 2 was isolated from feces of a patient in China with coronavirus disease who died. Confirmation of infectious virus in feces affirms the potential for fecal–oral or fecal–respiratory transmission and warrants further study."

[Circulation](#): Acute heart failure in multisystem inflammatory syndrome in children (MIS-C) in the context of global SARS-CoV-2 pandemic (17 May 2020)

"Thirty-five children were identified and included in the study. Median age at admission was 10 years (range 2-16 years). Co-morbidities were present in 28% including asthma and overweight. Gastrointestinal symptoms were prominent. Left ventricular ejection fraction was <30% in one third; 80% required inotropic support with 28% treated with ECMO. Inflammation markers were suggestive of cytokine storm (interleukin 6 median 135 pg/mL) and macrophage activation (D-dimer median 5284 ng/mL). Mean brain natriuretic peptide was elevated (5743 pg/mL). Thirty-one/35 (88%) patients tested positive for SARS-CoV-2 infection by PCR of nasopharyngeal swab or serology. All patients received intravenous immune globulin, with adjunctive steroid therapy used in one third. Left ventricular function was restored in the 25/35 of those discharged from the intensive care unit. No patient died, and all patients treated with ECMO were successfully weaned."

[Lancet Rheumatol](#): Novel paediatric presentation of COVID-19 with ARDS and cytokine storm syndrome without respiratory symptoms (15 May 2020)

"We report a 14-year-old previously healthy individual who presented to our institution with a 3-day history of pyrexia, abdominal pain, nausea, and vomiting, but without respiratory symptoms. The patient's mother reported mild respiratory symptoms 3 weeks previously but the patient had not been tested for SARS-CoV-2."

"To our knowledge, this case is the first paediatric patient reported with cytokine storm syndrome during the COVID-19 pandemic presenting without respiratory symptoms on hospital admission who was successfully treated with IL-1 inhibition. Although respiratory and stool PCR testing was negative, CT chest findings and biochemical and haematological variables were highly suggestive of COVID-19, with evidence of seroconversion."

*ICYMI—older than last 7 days*

[Kidney Int](#): Acute kidney injury in patients hospitalized with COVID-19 (13 May 2020)

"The rate of acute kidney injury (AKI) associated with patients hospitalized with Covid-19, and associated outcomes are not well understood. This study describes the presentation, risk factors and outcomes of AKI in patients hospitalized with Covid-19. We reviewed the

health records for all patients hospitalized with Covid-19 between March 1, and April 5, 2020, at 13 academic and community hospitals in metropolitan New York. Patients younger than 18 years of age, with end stage kidney disease or with a kidney transplant were excluded. AKI was defined according to KDIGO criteria. Of 5,449 patients admitted with Covid-19, AKI developed in 1,993 (36.6%). The peak stages of AKI were stage 1 in 46.5%, stage 2 in 22.4% and stage 3 in 31.1%. Of these, 14.3% required renal replacement therapy (RRT). AKI was primarily seen in Covid-19 patients with respiratory failure, with 89.7% of patients on mechanical ventilation developing AKI compared to 21.7% of non-ventilated patients. 276/285 (96.8%) of patients requiring RRT were on ventilators. Of patients who required ventilation and developed AKI, 52.2% had the onset of AKI within 24 hours of intubation. Risk factors for AKI included older age, diabetes mellitus, cardiovascular disease, black race, hypertension and need for ventilation and vasopressor medications. Among patients with AKI, 694 died (35%), 519 (26%) were discharged and 780 (39%) were still hospitalized. AKI occurs frequently among patients with Covid-19 disease. It occurs early and in temporal association with respiratory failure and is associated with a poor prognosis."

## **In Brief**

"A scientist who created a dashboard for monitoring Florida's rising number of COVID-19 cases said she's been fired for refusing to manipulate the data" ([NPR](#)).

Long read: "The coronavirus is coursing through different parts of the US in different ways, making the crisis harder to predict, control, or understand" ([Atlantic](#)).

## *Mental Health, Wellness, & Resilience*

Get your ZZZZs: adequate sleep is an important part of overall health and well-being, including mental health ([CHOP](#)).

Make your peace with wearing something on your face now, because masks and face shields are not going away any time soon ([Atlantic](#)).

## *Outbreaks and Mass Gatherings*

A church pastor is tied to a super-spreading event of COVID-19 in Arkansas. Two symptomatic people, who later tested positive for COVID-19, attended church events. Later, 35 of 92 attendees acquired COVID-19 and 3 people died. An additional 26 cases and 1 death in the community have been attributed to contact with church attendees ([MMWR](#)).

Another outbreak is associated with a wedding in Jordan. Of 350 wedding attendees, 76 developed COVID-19 ([Emerg Infect Dis](#)).

A poultry processing plant in North Carolina has had a quarter of employees—570 workers—test positive for coronavirus ([NPR](#)).

As to why some COVID-19 patients infect many others and some don't spread the virus at all, well... we really don't know, and that's an area that should be studied ([Science](#)).

### *Vaccines*

A vaccine might not be the magic bullet everyone expects ([STAT](#)).

The University of Oxford COVID vaccine trial will include children and older adults ([BBC](#)).

Here are some ideas what an effective COVID-19 vaccination program might look like ([JAMA](#)).

Any vaccine initiative could be challenging though; a new poll suggests a quarter of Americans have "little or no interest in taking a coronavirus vaccine ([Reuters](#)).

Anti-vaxxers are calling for people to resist efforts for mass vaccinations or other requirements ([WashPo](#)).

### *Bias and Disparities*

Online support groups are filling COVID-19 information gaps and helping patients arm against medical discrimination and bias ([Vox](#)).

Asian Americans, including some healthcare workers, have been verbally abused and physically attacked because of anti-Asian bias during the pandemic ([WashPo](#)).

For more on COVID-19 related disparities, see this 7-part series from MedPage Today covering: the homeless [[link](#)]; immigrants in detention [[link](#)]; the undocumented [[link](#)]; nursing home residents [[link](#)]; incarcerated individuals [[link](#)]; African Americans [[link](#)]; and Native Americans [[link](#)]. See also the summary from NMCP COVID-19 Report #13 (Tuesday, 12 May 2020).

Long read: "From Black Death to fatal flu, past pandemics show why people on the margins suffer most" ([Science](#)).

### *Other Infectious Diseases*

Polio once paralyzed 350,000 children each year, and vaccination campaigns brought it down to just a few hundred cases. But now the pandemic could halt progress in eradicating it ([Wired](#)).

Oh, and don't forget the plague. That's still a threat, too ([Clin Infect Dis](#)).

### *Actually, Just Don't Touch Anything. Including Dead Bodies.*

Curious to know how temperature and humidity affect how long SARS-CoV-2 lives on a surface? This natural decay calculator may help ([DHS](#)).

If you need to clean surfaces and are out of Lysol or another appropriate cleaning solution, try (simulated) sunlight, since that seems to work ([J Infect Dis](#)).

As much as we don't know about COVID-19, there's yet another area that is a huge unknown: the potential risks from dead bodies ([Medscape](#)).

For an unexpected perspective on this, read about the student took a job as a temporary morgue worker after her college closed ([NYT](#)).

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